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ABSTRACT

This activity booklet contains activities related to the skill category of linear measurement. For each behavior that is to be learned, activities are given for primary, elementary-middle, and secondary levels. Behaviors are categorized by level and are graded, with the easier tasks appearing first. (MP)

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ED179348

ACTIVITY BOOKLET

I. Quantitive

I. Linear

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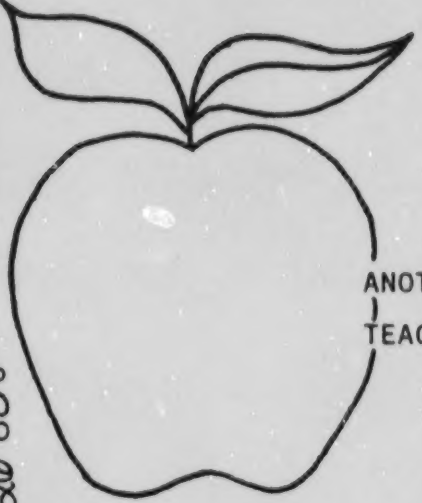

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TEACHER SUPPORT SERVICE

RESOURCE GUIDE TO APPLIED BASIC SKILLS

BY: CENTER FOR EDUCATIONAL IMPROVEMENT
AND
NORTHEAST GEORGIA CESA
WINTERVILLE, GEORGIA

SE 026 838

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 1

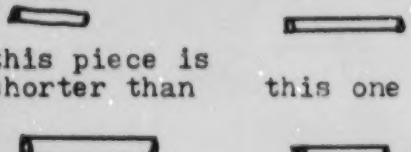
Behavior: Uses concept of long and short.

Primary Activity	Elementary-Middle	Secondary Activity
Compare long and short items. Show long rope--short rope. Long pencil--short pencil. Choose the long item. Choose the short item.	Have yardstick, 12 inch ruler. Which unit is long? Which is short? 36 inches 12 inches	Have beads (pearls) and a rope. Which is long? Which is short? How would you decide?

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 2

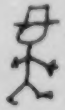
Behavior: Uses concept of longer and shorter.

Primary Activity	Elementary-Middle	Secondary Activity
Given items of various lengths the child will categorize the items as longer or shorter than. Example: two pieces of chalk  this piece is shorter than this one this piece is longer than this one.	Use rulers to measure items in the classroom. Students make a chart labeling the measured items as longer/shorter than one another. Example: shorter: Joe's desk is 16" longer: Mrs. Jones desk is 24"	Students use string to measure distances from one place to another. Begin all measures from one central point. Label with tags the points measured. Have students decide which distance is longer/shorter Use in classroom and outside to find and compare the measures.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 3

Behavior: Uses concept of tall and short.

Primary Activity	Elementary-Middle	Secondary Activity
Give a picture of two men. Ask which is the tall man and which is the short. tall  short Compare tall and short buildings surrounding your area.	Place a tall object and a short object in front of class. Ask students to name each. Demonstrate concept. Which is tall? Which is short? Do this for 20 selected items.	Using 2 class members, compare as to tall and short. Ask students then to list classmates and write tall or short by each name. Do same for all or selected faculty members.

Skill Category: Length/Area Flow Chart Code: Primary I-I # 4

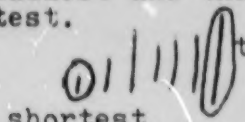
Behavior: Uses concept of taller and shorter.

Primary Activity	Elementary-Middle	Secondary Activity
Have two children stand beside each other. Discuss and choose who is "taller" and who is "shorter". Example: Bob is taller than Mary. Mary is shorter than Bob.	Provide yardsticks to children. Have them measure who is "taller" than they are and who is "shorter".	Situation - Example: Suppose Tim bet Joe that he was the "tallest". To prove this he stood in the seat of his desk. Does this prove he is tallest? How should Tim prove he is tallest? Compare two people in the room. Who is taller?

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 5

Behavior: Uses concept of tallest and shortest.

Primary Activity	Elementary-Middle	Secondary Activity
Line children up. Point out who is "shortest" and who is "tallest". Give an activity sheet with different size sticks on the page. Have them circle the tallest and the shortest.  	Select two students from the class. Ask if Ted is the "shortest" or the "tallest". This is a comparison activity which also checks the relations involved and the words used. Do same for other class members.	Compare two buildings in the community by memory. Take a walking tour if possible to locate the tallest and shortest a) person in school. b) building in town, or c) wing of the school.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 6

Behavior: Uses concept of wide and narrow.

Primary Activity	Elementary-Middle	Secondary Activity
Show a picture of two tunnels. One has a wide opening and one has a narrow. Discuss both concepts. Name things that could not fit in the narrow tunnel.	Have two boxes. One with a wide slot and one with a narrow slot. Have children place the correct width in the correct boxes.	Discuss: "wide load"-(truck), "narrow bridge", "narrow shoulders", shoe width. Be certain the student can write a paragraph to demonstrate it.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 7

Behavior: Uses concept of wider and narrower.

Primary Activity	Elementary-Middle	Secondary Activity
Place a child's desk beside the teacher's desk. Which desk is "wider"? Which desk is "narrower"? Find other objects in room and demonstrate and discuss by comparing.	Using a ruler, the child will measure two objects and tell which is wider. Can you tell which is wider without measuring with a ruler?	On a series of common objects, discuss that some are wider and some are narrower. Find common classroom objects and compare aloud as to wider or narrower.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 8

Behavior: Uses concept that things can be measured by length. Things can be measured across or up and down.

Primary Activity	Elementary-Middle	Secondary Activity
Introduce the concept "length". Say "To find how long or short an object is we measure it by "length". Take a piece of string to measure the length of objects in the room.	Measure the length of different objects with rulers. Make a chart of the different lengths of objects in your room. Object | Length Table | 36 inches Door | 3 feet Chalkboard | etc. (Might be secondary)	Measure the length of a car to fit into a garage. Example: If we put boxes in the garage, will we still be able to get this car in too? How about a shorter car?

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 9

Behavior: Identifies common ways to measure length (foot, hands, ruler, string, yardstick, etc.).

Primary Activity	Elementary-Middle	Secondary Activity
Discuss the various instruments used to measure length--string, foot, hands etc. Measure the length of the room by a child's feet. Measure the desk with string, etc.	Materials: ruler, yardstick, string, etc. Show different ways to measure the same length. Example: measure a chalkledge length with a yardstick. Then have someone measure it with a ruler. Discuss why the yardstick is appropriate.	The teacher will discuss common ways to measure length. Measure two common objects with ruler, foot, hands, string. Give a ditto sheet to ask names of ways we measure length.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 10

Behavior: Identifies a tape measure.

Primary Activity	Elementary-Middle	Secondary Activity
Draw a picture of a tape measure. Bring a tape measure; have them find it in a box. Given a ruler, tape measure, yardstick and string, the child can choose (label) the tape measure.	Given a tape measure and several things to measure of varying lengths. The child will be able to choose a tape measure when asked and measure the appropriate item. Example: Tape measure for table (or long items in feet); ruler for measuring inches.	Given a tape measure the child will be able to show that a tape measure is for measuring feet, yards, and inches. Let the child tell how many inches in the table, how many feet and yards.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 11

Behavior: Identifies a "yardstick".

Primary Activity	Elementary-Middle	Secondary Activity
Give the child a ruler and a tape measure and let him choose the yardstick when called upon. Show that a yardstick measures one yard or 36". Have him measure items in "yards". Draw a picture of a yardstick. Bring one and pick one out of a box.	Ask how many inches in a yard. Ask how many feet in a yard. Measure items in yards and inches and feet.	Measure the classroom. Chart how many inches, feet, and yards across the room. These are three units of measurement. Which is most appropriate for large areas?

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 12

Behavior: Identifies a "foot-ruler".

Primary Activity	Elementary-Middle	Secondary Activity
Bring a ruler. Draw one on the board. Have kids choose one out of a box.	Show a ruler, a yardstick, and a tape measure. Choose the ruler.	Show a ruler. An average man's foot is approximately "1 foot". Measure your own foot and discuss why a "foot ruler" is named so.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 13

Behavior: Chooses appropriate things to measure with (yardstick won't measure waist).

Primary Activity	Elementary-Middle	Secondary Activity
List to the child a desk, a pencil, the room length, a person's waist size, etc. and ask them to identify the correct unit to measure with. Place this on a chart and discuss.	Have the children measure their waist, arms, or another part of the body. Have them measure the length of a table, and a pencil. Provide a ruler, a yardstick and a tape measure, and let them choose the correct unit.	Discuss that we must use correct method to measure length. Make a chart of things we need to measure. Beside each, list the tool we would use to measure length.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 14

Behavior: Uses concept of "unit" as a way to measure.

Primary Activity	Elementary-Middle	Secondary Activity
Show kids that objects used for measuring are called units. Have them measure length and width of the room. Also measure with hands, etc. having each child use some part of body. Talk about how each child having some unit of measurement.	→	Use same activity, except substitute measuring by pacing off distance on athletic field as a coach would do, and compare with measurement of same distance using another unit, using chain "down" markers.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 15

Behavior: Uses concept that we need a unit of measure to compare things.

Primary Activity	Elementary-Middle	Secondary Activity
See activity Primary I-I, # 17.		

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 16

Behavior: Uses concept that units tell how long or short things are.

Primary Activity	Elementary-Middle	Secondary Activity
Play a game-Who's the shortest? How do you use a unit of measurement to find out? Who's the longest or shortest. Measure using the appropriate unit. →	Who has the longest piece of string (according to a certain unit of measurement?). Who has the shortest? →	
Show the three units discussed earlier; ruler, tape measure, yardstick. Show as three units of measure.	Who has the shortest and longest unit of measurement? (using feet, hands, etc.)	

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 17

Behavior: Uses concept that we cannot compare length unless we all use the same unit.

Primary Activity	Elementary-Middle	Secondary Activity
Have children measure length of room with their feet. (step off). Then show children that each measure was different. Why? Show children a ruler and tell that it's always "this long". Have one child measure with a ruler, then another, compare, and discuss that results are same.	Repeat same activity as primary.	Have students measure the classroom for a "new floor", using varying units, such as rope, belt, book, yardstick. When each number comes out different, point out that in order to get consistent measures, a standard unit must be used.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 18

Behavior: Uses concept of height (how high?).

Primary Activity	Elementary-Middle	Secondary Activity
Ask children: What is the height of Richard? What is the height of this chair? (Show how high with hands).	Ask me a question about how high 3 objects or persons are, or make a statement describing the height of three objects.	Have student list objects or situations in which height would be significant. (Example: flying a plane, overpasses on the highway for truck drivers, etc.)

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 19

Behavior: Uses concept of length (how long?)

Primary Activity	Elementary-Middle	Secondary Activity
Say "How long is this pencil?" How long is this string? Have the kids show you how long it is by using their hands.	Write three questions asking <u>how long</u> an object is.	How long is this car? Volkswagen and stationwagon, etc. Make a chart asking kids which is measured by lengths and which by height?

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 20

Behavior: Uses concept of width (now wide?).

Primary Activity	Elementary-Middle	Secondary Activity
Say "How wide is the door in our room?" "How wide is your desk?" Show with hands.	Write three questions for me asking how wide an object is.	Make a chart listing things that are measured by lengths, widths, and heights, and have kids tell which is which.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 21

Behavior: Puts in order by height.

Primary Activity	Elementary-Middle	Secondary Activity
Place different height books, boxes, etc. side by side. Have children place in order by height.	Same activity using people, chairs, etc. Line each child up according to height.	Show children pictures of buildings. Place according to height in order.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 22

Behavior: Puts in order by length.

Primary Activity	Elementary-Middle	Secondary Activity
Cuts strips of paper with different lengths. Make sure they have some width so as not to confuse. Have children place in order by length. Which is longer, shorter, etc.	Same idea using a chart so that kids can see the difference in lengths. Have them use rulers if they wish. (This has been introduced).	Show lengths of cars, roads, and materials that are relevent to their interests. Collect pictures of cars and put in order by length.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 23

Behavior: Puts in order by width.

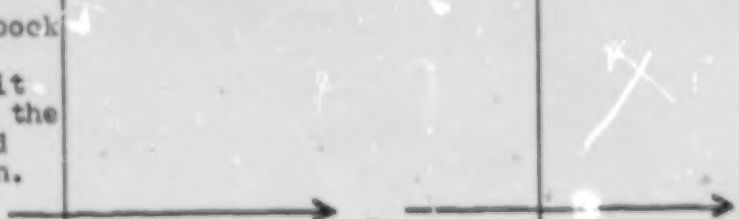
Primary Activity	Elementary-Middle	Secondary Activity
Cut strips of paper having the same length and different widths. Have kids place the strips in order according to width.	Make a chart with different width pieces of paper. Have children measure which is wider and list accordingly.	Show a picture of a wide car and a narrow car. Also show two garages (wide and narrow), and ask them to choose which car fits in the proper garage.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 24

Behavior: Uses concept that two objects of same length, width and height are the same in different locations.

Primary Activity	Elementary-Middle	Secondary Activity
Have a child measure a book with a string and say, "Hold the string where it is and I'm going to put the book under the table and let you measure it again. Is it the same size?" (Do same for various locations and positions within the room)		



Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 25

Behavior: Uses concept of inch as unit of measurement.

Primary Activity	Elementary-Middle	Secondary Activity
Pass out string. Have a piece of tape across one inch or color it. Show them that anything this long, this wide or this high is an "inch". Have them measure things with the string by inches.	Have each student stand against wall and mark off number of inches in height the child is. Have students look at distance as measured on the wall, tell them this is how many inches high, tall, long they are. Have students count each inch themselves, emphasizing that inches are used to help us know how high we are, tall, long, etc.	At various job sites on which students are employed, have them identify and measure common objects that are used in daily work.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 26

Behavior: Chooses common objects we measure by lengths, inches.

Primary Activity	Elementary-Middle	Secondary Activity
Ask the kids if they would use an inch to measure a toothbrush or a mountain? Ask several of these questions and make a chart.	Have students select correct shoe height in inches according to their height in feet. Emphasize importance of properly selecting shoes with correct inch heels in order to accentuate or to diminish one's height.	Have students visit a furniture store and decide on desired television to purchase according to number inch screen.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 27

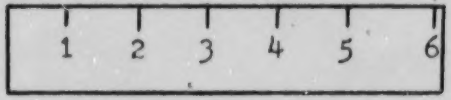
Behavior: Concept that we use a ruler to measure an inch or inches.

Primary Activity

Give the kids a ruler and show that the inches are the same length apart and that a ruler has 12 inches. Use the rulers to measure things to the nearest inch. Example: comb, pencil, shampoo tube.

Elementary-Middle

1. Have students make their own rulers out of heavy construction paper. The ruler should have units as the one below:



2. Then give out worksheet which would require students to do the following: Instructions: "Use your ruler to measure these to the nearest inch".

a. _____(3)

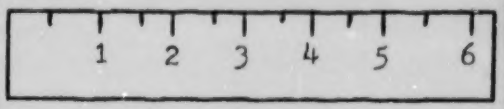
b. 29 (4)

c. _____(2)

Secondary Activity

Same for Secondary, except proceed here with step 3.

3. Have students mark half-units on their rulers as such:



4. Then give worksheet with these instructions: "Measure these units to the nearest half-inch."

a. _____($1\frac{1}{2}$)

b. _____($3\frac{1}{2}$)

c. _____($2\frac{1}{2}$)

d. _____(2-o/2)

Skill Category: Length/Area **Flow Chart Code:** Primary I-I
" 28

Behavior: Shows inch of measure on a ruler.

Primary Activity	Elementary-Middle	Secondary Activity
Give the child a piece of paper and tell him to make two marks showing how long an inch is.	Give students standard rulers (following previous activities) and have them point out the various degrees of inches. →	Same Except, have students point out half-inch, and quarter inches.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 29

Behavior: Uses concept of foot as a unit of measurement.

Primary Activity	Elementary-Middle	Secondary Activity
Give the kids a "foot-ruler" and tell them that anything that measured that high, that wide, or that long would be a "foot" long. Measure things around the room by feet.	Buy several sheets of light-weight plywood and have students make rulers in one foot sections; as process continues, constantly emphasize that twelve inches make one foot. Ask students to show you one foot-have them hold up their one-foot rulers.	Have students make rulers out of plywood as in middle-school activity, in one foot sections. Have students put several "feet" together to measure various things. Always refer to the number of inc inches in the objects they are measuring in feet.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 30

Behavior: Chooses common objects measured by foot.

Primary Activity	Elementary-Middle	Secondary Activity
Ask the kids what kind of things they would measure by the foot? Example: Would you measure a safety? a pencil, a horse, a person?	In classroom, have students to guess which objects would be measured by foot. Examples: closets, file-cabinets, chalkboard, would be. Pencils, papers etc. would not be.	Have class visit a marina in which many boats of varying lengths are harbored. Give them directions as follows: "Find the 30-foot boat, 18-foot boat, etc." Emphasize that boat sizes are determined by feet.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 31

Behavior: Uses concept that we measure feet on a ruler or a yardstick.

Primary Activity	Elementary-Middle	Secondary Activity
Show that <u>one</u> foot has 12 inches, 36 inches makes 3 feet. Show this table: Show the number of feet: 12 in. = ___ ft. 24 in. = ___ ft. 36 in. = ___ ft. How many inches? 3 ft. = ___ inches, 2 ft. = ___ inches, 1 ft. = ___ inches.	Same →	Same
	As in Primary Activity # 29, students can make yardsticks out of plywood, marking off just the number of feet that should be included. →	Same

Feet	1	2	3
Inches	12	24	36

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 32

Behavior: Indicates foot on a yardstick.

Primary Activity	Elementary-Middle	Secondary Activity
Give kids a long strip of paper and a ruler and a yardstick. Have them make marks to show where a foot is on a ruler and a yardstick.	Have students point to the feet they've marked off on their own yardsticks.	Have students take various kinds of yardsticks and point to the varying degrees of feet on them.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 33

Behavior: Uses concept of yard as a unit of measurement.

Primary Activity	Elementary-Middle	Secondary Activity
Give the kids a yardstick and tell them that anything that measured this high, wide or long is a yard long. Measure things around the room by yards.	Have students go to the football field and explain concept of yards as important to football. Have students walk length of field, pausing at various spots illustrating that number of yards already walked.	Same as Elementary-Middle activity.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 34

Behavior: Chooses common things measured by the yard.

Primary Activity	Elementary-Middle	Secondary Activity
Ask kids what they would measure by the yard. Give examples: would you measure dress material or a pencil. A toothbrush or a bed?	Visit fabric store. Take bolt of fabric, lay on measuring table, illustrate with fabric an actual "yard" of material. Have each child measure certain number of yards with various fabrics. →	Same Have female students choose dress pattern and purchase correct amount of fabric according to yards called for.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 35

Behavior: Uses concept that we measure yards on a yardstick or tape measure.

Primary Activity	Elementary-Middle	Secondary Activity
Tell the children that you can measure yards with a tape measure for some things and a yardstick for others. Make a list of things and ask which unit would be appropriate to use.	Bring a yardstick and a tape measure into the classroom. Lay yardstick on a table, put tape measure beside it. Point out how each measures a yard, then discuss among the class where a yardstick would be feasible to measure and what situations would demand measuring by tape measure.	Same as Elementary-Middle activity.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 36

Behavior: Demonstrate yard on yardstick or tape measure.

Primary Activity	Elementary-Middle	Secondary Activity
Have kids come to blackboard and mark a yard with a yardstick. Right under that start at the same point and have him measure a yard with a tape measure. One is flexible, one is not. Discuss that they have same length.	Tape yardstick and tape measure on chalkboard. Have students go to board and point out the yards on each, calling the correct number of yards as they progress.	Same as Elementary-Middle activity.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 37

Behavior: Measure outside length of object with a string.

Primary Activity	Elementary-Middle	Secondary Activity
Given common objects, the student is asked to lay a string around the object, then stretch string on yardstick. Ask is it larger or smaller than a yard. Measure waists with string to determine longest.	→ Same →	Same

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 38

Behavior: Measure waist with a tape measure.

Primary Activity	Elementary-Middle	Secondary Activity
Bring a tape measure and show them that you use the flexible unit to measure things "around". Have child try this. Show that a yardstick is not appropriate.	Provide each student with a tape measure. Have students begin at standard point on waist, then measure around until entire waist is measured. →	Same Have students record waist measurement in inches; have them learn to call waist measurements in inches rather than feet, yards, etc.

Skill Category: Length/Area **Flow Chart Code:** Primary I-I # 39

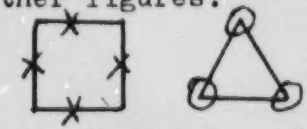
Behavior: Uses concept that a number of units can fill a similar larger unit.

Primary Activity	Elementary-Middle	Secondary Activity
Have a game: "Which is = to which?" Place 3 rulers on a yardstick or tape measure. Cut 1" (12) strips of paper to fit on a ruler. Let children manipulate and then answer questions.	Use plywood one-foot rulers. Lay 3 on table, side by side, then take yardstick and have students to tell whether or not the 3 one-foot rulers are the same as yardstick. Demonstrate that they are by placing the yardstick on top of 3 one-foot rulers.	Same as Elementary-Middle activity.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 40

Behavior: Uses concept of geometric figure.

Primary Activity	Elementary-Middle	Secondary Activity
Draw several figures with straight sides on the board. Review the idea of sides and corners. Let children mark an x on the sides of the figures and circle the corners of other figures.  Say: Name some other figures and draw them.	Give students dittos on which geometric figures are drawn. Squares, circles, triangles, etc. Then have students cut these out, trace over them and hold them up correctly as you ask for "triangles" etc. → Same	Students could make their own geometric figures in the shop out of wood.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 41

Behavior: Uses concept of open figure.

Primary Activity	Elementary-Middle	Secondary Activity
Explain that straight lines angles, etc. are open figures because the lines do not meet. Make a worksheet of open and closed figures and have students circle the open ones.	Have several examples of open and closed figures in the classroom. Example: A string, a clear box, a triangular musical instrument. Have students determine which are open, which are closed figures, using the definition as stated in primary activity.	Same as Elementary-Middle activity.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 42

Behavior: Uses concept of closed figures.

Primary Activity	Elementary-Middle	Secondary Activity
Show various shapes on the board such as triangles, circles, squares, and show that these figures are closed because the lines come together on all sides. Make a worksheet showing open and closed figures. Ask students to X over the closed figures. Let children draw and cut out closed figures.	→ Same Have worksheet of several open figures and instruct the students to make them closed figures.	→ Same

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 43

Behavior: Uses concept of rectangle (opposite sides equal).

Primary Activity	Elementary-Middle	Secondary Activity
Draw a rectangle on the board and explain that this figure is a rectangle. Take a ruler and show that opposite sides are equal. Pass out scissors, construction paper and rulers. Let children draw and cut out rectangles. Emphasize long, short, fat, thin, rectangles. →	Same →	Same Make rectangles in wood works class. Write name on top of figure.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 44

Behavior: Uses concept of square (4 sides equal).

Primary Activity	Elementary-Middle	Secondary Activity
Draw several sizes of squares on board and explain that 4 sides are equal. Cut out squares. Teach how to cut a square by folding paper. Draw a picture using only squares.	→ Same	→ Same Make square from wood; paint word "square" on top of it.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 45

Behavior: Uses concept of circle.

Primary Activity	Elementary-Middle	Secondary Activity
Draw a circle on the board and label it. Ask children to name things in classroom that have circles or are made of circles. Draw a picture using only circles.	Same	Same
	Give students compasses and have them follow directions to make circles.	
		Give students protractors and explain their usage and have students make circles with them.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 46

Behavior: Uses concept of triangle.

Primary Activity	Elementary-Middle	Secondary Activity
Let students cut out triangles. Find things in classroom with shape of triangle. Make a picture using only trianagles.	Same as Primary. Have students play a song using triangle musical instruments.	Same as Primary Have triangles made by students in shop. Paint the word "triangle" on top of the shape.

Skill Category: Length/Area

Flow Chart Code: Primary I-I # 47

Behavior: Uses concept that people use different measures for length in different countries.

Primary Activity	Elementary-Middle	Secondary Activity
Make color coded flags on straight pins. On a world map, pin the flags on the countries that use specific types of measurement system (metric or standard).	Use Elementary I-I, # 26 activity.	Use Elementary I-I, # 26 activity.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 1

Behavior: Uses concept of "city block".

Primary Activity	Elementary-Middle	Secondary Activity
Field trip: Students walk a full block, stopping at the corners and reviewing where they have been and where they are going. Point out to students the measurement of a block as by the streets that surround it. Allow children to touch signposts, curbs, etc.	Students draw a map of their block on which they live.	Go walking in downtown district. As you walk from one block to another, have students tell what they are doing. "We're walking from "_____ street" to "_____ street." This is one block. From "____ street, to _____ street is four blocks, because you cross _____, _____, _____, and _____ streets.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 2

Behavior: Gives directions by the "city block".

Primary Activity	Elementary-Middle	Secondary Activity
Have students name landmarks at various points for naming city blocks.	Given a city map used as a game board the student will give directions to a friend (player with a toy car) and the player will move his car according to the other player's directions. The player giving the directions can only use numbers of blocks, left, right, straight, turn, stop. The object is to get the driver to the finish in the shortest distance possible.	Students work in pairs. One student draws a map of the city giving directions using city blocks as references. The other student takes the map and follows it according to the directions. Students may race with one another to see who gives and follows directions the best.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 3

Behavior: Uses concept of measuring length in wholes and parts.

Primary Activity	Elementary-Middle	Secondary Activity
Show children a length of string. Use the string to measure items that are the length of the whole string and some that are part of the length of the string. Have children tell which is the whole length and which is a part.	Using a ruler without consideration to the inch marks have children measure items and tell whether they are the whole length of the ruler or a part of the length of the ruler.	Take rulers, have students follow these directions: "Measure $\frac{1}{2}$ of the length of the floor, then measure the entire length." Repeat process for several things such as chalkboard, tables, desks, etc.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 4

Behavior: Measures to the nearest inch.

Primary Activity	Elementary-Middle	Secondary Activity
Tell students to take their rulers and measure objects that aren't over 6 inches in length. Example: their fingers, their pencils, their scissors, any small objects. Then have them calculate the correct number of inches.	Given rulers, students measure objects in the classroom to the nearest inch and record their findings.	Given rulers and yardsticks the students will measure in and out of the classroom objects according to nearest inches.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 5

Behavior: Uses concept of "½" as "half".

Primary Activity	Elementary-Middle	Secondary Activity
Let children help you bake a cake, pie or some dessert. Then as they all observe, cut the dessert into half, take the half put a sign by it "½". Take the other half, put a sign by it "half". Have students to see the 2 halves are the same and that the labels mean the same.	Teacher labels objects that represent one-half of something. Teacher first reviews the objects as: This is one-half of an apple, one half of a glass of water, etc. Then the teacher introduces the sign "½" on a card and tells the students that this sign means the same as saying <u>one-half</u>.	Same as Middle School activity.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 6

Behavior: Uses concept of half-inch.

Primary Activity	Elementary-Middle	Secondary Activity
	Using a large ruler or a picture of a ruler with the inch and half-inch markings, the teacher shows that the half-inch mark is one half of the inch. (Divide the inch into two equal parts). Students are then given rulers to measure objects to the half-inch.	Same as Middle activity.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 7

Behavior: Measures to nearest foot.

Primary Activity	Elementary-Middle	Secondary Activity
Same as Middle activity.	Given a yardstick the child will measure objects in the classroom to the nearest foot. Allow children to measure objects that may be in between 2 measures and have them tell which foot the object is closest.	Students measure in shop such as wood planks of varying lengths, cars in auto shop, measure furniture and lengths of rooms.

Skill Category: Length/Area **Flow Chart Code:** Elementary I-I # 8

Behavior: Uses concept that 1 ft. = 12 inches.

Primary Activity	Elementary-Middle	Secondary Activity
Same as Middle activity.	Give students a ruler and 12 one inch pieces of paper (board, etc.). Students will measure the ruler using the one-inch papers. As the student lays a piece of paper down next to the ruler he will number it (1-12). Teacher stresses that it took 12 pieces of paper that were one inch in length to make 1 foot.	Student will measure objects in inches (12 inches) and also tell how many feet the object measures.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 8a

Behavior: Uses concept that 1 ft. = 12 inches.

Primary Activity	Elementary-Middle	Secondary Activity
Give each child a 12 inch ruler and several items that are not exactly a foot long. Also give them, mixed with these items, something that is 12 inches long. (You can put all these things in a box and let them draw them out.) Have a sheet that lists each item with a block to show how many inches it is. Tell children to measure the items to the nearest foot. 1. My pencil is _____ inches long. 2. The comb is _____ inches long. 3. The toothbrush is _____ inches long. 4. The ruler is _____ inches long or 1 foot. 5. The desk is closer to 1 foot or 2 feet?		

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 9

Behavior: Uses concept of half-foot.

Primary Activity	Elementary-Middle	Secondary Activity
Same as Middle activity.	After discussing that a foot is 12 inches long, ask the children if they can tell you what a half of that would be. How many inches would be in a half foot? What is half of 12 inches? What is half of one foot?	Use one foot rulers students made earlier and have them point to half-foot position on the rulers. Then, use yardstick and have them indicate half-feet on them.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 10

Behavior: Uses concept of half-foot as 6 inches.

Primary Activity	Elementary-Middle	Secondary Activity
	Continue as in previous activity (Elementary # 9). Measure items that are half-foot long.	Divide one-foot ruler into $\frac{1}{2}$. Prompt students to recall that 1 foot has 12 inches and to determine what one half of a foot would be, consider $\frac{1}{2}$ of 12.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 11

Behavior: Identifies things bought by the foot.

Primary Activity	Elementary-Middle	Secondary Activity
	Ask children if they know any items bought by the foot. Name things such as cloth, lumber, carpet, floors. List items such as books, coffee pots, etc. not measured by foot. Let children cut pictures of things bought by the foot.	Go to businesses where these type items are sold and have students point some of them out. Then have salespersons "sell" some students items, letting students determine correctly the number of feet the item should be.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 12

Behavior: Uses ft. as abbreviation for foot.

Primary Activity	Elementary-Middle	Secondary Activity
	Write the word foot on the board and ask if they know a shorter way to write it. Discuss "abbreviations". Show ft. as abbreviation for foot. 1 foot = 1 ft.	Same as Middle activity.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 13

Behavior: Uses 1 yard as 36 inches.

Primary Activity	Elementary-Middle	Secondary Activity
Same as Middle activity.	Give each child a yardstick. Make a list of things measured by yard. State how many inches equal a yard. List items in feet. Have children find inches to nearest yard.	See Primary activity # 29. Use rulers students have made, and put 3 one-foot rulers together, have students count out the 36 inches. Then lay regular yardstick beside 3 one-foot rulers to show it is the same.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 14

Behavior: Uses 1 yard as 3 feet.

Primary Activity	Elementary-Middle	Secondary Activity
	Give students a regular yardstick, and ask them to determine how many feet in one yard by counting out the sections containing one foot.	Same as Middle activity.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 15

Behavior: Uses distance from tip of nose to outstretched fingertip as estimate of one yard (to measure cloth, string, etc.).

Primary Activity	Elementary-Middle	Secondary Activity
	Show the length of a yardstick and then the outstretched finger that should be about the same length. Let children measure cloth by the yardstick and then with their arm to show the difference. Then let kids measure each other from tip to finger.	Take students to a fabric store. Have salesperson demonstrate the way to measure as indicated above and then have students model this behavior.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 16

Behavior: Measures to nearest yard.

Primary Activity	Elementary-Middle	Secondary Activity
	Use a yardstick to measure to the nearest yard. 1. Reading table. 2. Width of room. 3. Width of door. 4. Bulletin board.	Same activity as Middle, but list of objects could be expanded to cover measuring things that they use at work and are familiar with.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 17

Behavior: Uses concept of "half-yard".

Primary Activity	Elementary-Middle	Secondary Activity
	After discussing how many inches are in a yard, ask the children how many inches half a yard would be. How many ways can you state a "half-yard"? _____ inches = yard _____ inches = half-yard _____ feet = yard.	Same as Middle activity.

Skill Category: Length/Area

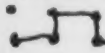
Flow Chart Code: Elementary I-I # 18

Behavior: Uses yd. as abbreviation for yard.

Primary Activity	Elementary-Middle	Secondary Activity
	Write yard on board and review what an abbreviation is. Ask if they know abbreviation for yard. Review 1 foot = 1 ft. Teach 1 yard = 1 yd. Ditto: Circle the correct abbreviation for yard.	Same as Middle activity.

Skill Category: Length/Area **Flow Chart Code:** Elementary I-I # 19

Behavior: Finds number of length units in figures like



Primary Activity	Elementary-Middle	Secondary Activity
	Prepare a ditto sheet from simple to complex forms to ask students to count units in same figures.	Have students work on same activity as Middle.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 20

Behavior: Finds length units around outside in figures like .

Primary Activity	Elementary-Middle	Secondary Activity
	Make geoboards with students. (Nails in rows on plywood.) Then use colored rubber bands to outline a square or rectangle. Have students copy on their board and count the units.	Same as Middle activity.

Skill Category: Length/Area **Flow Chart Code:** Elementary I-I # 21

Behavior: Uses concept that a unit the same size on all sides is a square unit.

Primary Activity	Elementary-Middle	Secondary Activity
	Give the children a large rectangle that is blank inside. Also give the same size rectangle with smaller squares drawn in. Ask the children to cut out these squares and fit them into the blank rectangle. Ask how many units fit into the larger one.	Same as Middle activity.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 22

Behavior: Uses concept of square inch.

Primary Activity	Elementary-Middle	Secondary Activity
	Give children different shapes of rectangular figures cut from tagboard. Make a ditto of square inches to cut out. Ask students to lay square inches on figures to determine number of square inches in figure.	Same as Middle activity. Then have discussion of things that are commonly referred to by the square inch and are bought or sold by the square inch.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 23

Behavior: Uses concept of square foot.

Primary Activity	Elementary-Middle	Secondary Activity
	Measure table top, rug, desk top, and round off to nearest foot. Multiply to find square feet in surface. Ditto sheet of pictures to find square footage. 2 ft. 4 ft.	Same procedure as Elementary # 22.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 24

Behavior: Uses concept of square yard.

Primary Activity	Elementary-Middle	Secondary Activity
	Use floor, hallway, or area of outside grass. Measure with yardstick, then calculate square yards. Ditto sheet of diagrams to figure square yardage. 4 yds. 3 yds.	Same procedure as Elementary # 22 & # 23.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 25

Behavior: Measures perimeter of all shapes.

Primary Activity	Elementary-Middle	Secondary Activity
	Have students measure the perimeters of their books, doors, tiles, etc., everyday shapes and pictures of various geometric shapes, then pair off to check each other if answers are the same/correct.	Same as Middle activity. Have student make their own "geometric" shapes just by using a straight edge or ruler and connecting random straight lines. Then have them measure the perimeters of the shapes. If they wish they may color them in. Student may make their own geometric shapes as in above and exchange them to measure perimeters of each other's pictures.

Skill Category: Length/Area

Flow Chart Code: Elementary I-I # 26

Behavior: Names other systems of length measurement, mainly metric.

Primary Activity	Elementary-Middle	Secondary Activity
	Use a map of areas that have different systems of measurement and let kids stick colored pins in areas of metric system and of English system for length.	Have resource person from a country where another system of measurement (metric) is employed come to the classroom and tell about the differences in the systems of measurement. Have this person bring along several items that are measured in metric units and show the same items and how they're measured in our system.

Skill Category: Length/Area **Flow Chart Code:** Middle I-I # 1

Behavior: States length in terms of whole plus half units (2 and ½ miles, 3½ ft.).

Primary Activity	Elementary-Middle	Secondary Activity
	Give child premeasured strips of paper in whole plus half units of feet or inches. Let child measure and write length on sheet. Ditto sheet: prepare lines to be measured by students Write on line its length (2½, 3½, etc.).	Use activities for Elementary-Middle. Have class measure each other to find their height, 3½ or 4½ ft.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 2

Behavior: Uses concept of mixed units of length (3 yards, 2 feet or 2 feet, 6 inches.)

Primary Activity	Elementary-Middle	Secondary Activity
	Give child strips of paper in whole and half units of feet or inches. Let child measure and write length on the strips. Let the child find things at his desk (such as pencils, paper or books) to measure and show to the class.	Let class measure off a spot for a garden. Build a work table, tool box, using these units of measures; also sewing purposes.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 3

Behavior: Recognizes $\frac{1}{4}$ as one-fourth.

Primary Activity	Elementary-Middle	Secondary Activity
	Give each child a ruler and draw a ruler on the board. Show the children (by marking) where one-fourth is on a ruler. Have them find it on their ruler and show it to the class. Write the word "one-fourth" and say that in numbers it is written as $\frac{1}{4}$.	Use same activity that was used for Middle school to demonstrate $\frac{1}{4}$. Let class measure, saw or cut out this measure $\frac{1}{4}$ such as $\frac{1}{4}$ inch of cloth, etc.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 4

Behavior: Uses concept of ¼ inch or quarter inch.

Primary Activity	Elementary-Middle	Secondary Activity
	Give each child a ruler, then draw a ruler on the board. Show class by marking where ¼ of an inch is. Show the class how ¼ is written. Have the class to find ¼ on their ruler. Have them on paper measure that length. Also use woods, cloth or string.	Same activity as Middle.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 5

Behavior: Point out ¼ inch on a 12" ruler or yardstick.

Primary Activity	Elementary-Middle	Secondary Activity
	Use rulers made previously and mark quarter inches on them. Have students mark ¼ inch marks on the rulers in varying colors from inch, half-inch marks.	Same as Middle activity. Use different yardsticks or rulers other than student made ones and have them point out quarter-inches on them.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 6

Behavior: Recognizes 3/4 as three-fourths or 3 quarters.

Primary Activity	Elementary-Middle	Secondary Activity
	Give children a ruler and draw a ruler on the board. Show by a mark where 3/4 of an inch is. Also write that the word three-fourth is written 3/4 as a number. Let the children find 3/4 on their ruler and show to class.	Tell the class that 3/4 of something is also called 3 quarters.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 7

Behavior: Uses concept of "3/4 inch".

Primary Activity	Elementary-Middle	Secondary Activity
	Same as Secondary.	Using their rulers, have students count aloud as they find 1/4 inch, 1/2 inch, then 3/4 inch. Have them always refer to this point on their rulers as 3/4 inch.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 8

Behavior: Point out 3/4 inch on a twelve inch ruler or yardstick.

Primary Activity	Elementary-Middle	Secondary Activity
	Have class measure off 3/4 inches on the board, strips of paper, pencil using the ruler or yardstick.	Have children measuring boards for bird houses, tables and other small items using the ruler or yardstick.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 9

Behavior: Uses concept of a mile.

Primary Activity	Elementary-Middle	Secondary Activity
	Mark off the play ground so that the children can run (or walk) a mile by running a few laps. Have the kids run a mile, so they will get the concept of a mile. Find places in town that are about a mile apart. Say it's about a mile from the "Dairy Queen to the Post Office" or something that is about a mile in your town.	Same as Middle activity.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 10

Behavior: Uses concept that 5280 feet = 1 mile.

Primary Activity	Elementary-Middle	Secondary Activity
	Have students hike a mile, and determine approximately the number of feet you have walked. Instructions: Before walking the mile, give out yardsticks, explain that there are 5280 feet in one mile and tell students you want to check this figure for correction. Then, have one student stand at starting and lay down his yardstick; have one student to be "recorder" for the hike and at this point have him record 3 feet. Then have another student put down his yardstick at the point where the first one ended, record another 3 feet. Continue this process until the mile is completed. In classroom, talk about the figures the recorder came up with, etc.	

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 11

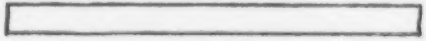
Behavior: Uses mi. as abbreviation for mile.

Primary Activity	Elementary-Middle	Secondary Activity
	Give out ditto which has several abbreviations previously studied on it and have students match whole word and its abbreviation. Include mi. for mile on this sheet.	Same as Middle activity.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 12

Behavior: Uses concept of 1/2 mile.

Primary Activity	Elementary-Middle	Secondary Activity
	Ask the children to name things they think are about ½ mile away. Use a long thin strip of paper to represent a mile. Say "The fairground is on this end and my house is on the other side. If we fold the paper in half, what is a ½ from my house?"  fair-ground school house	Plan a trip and walk a half mile.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 13

Behavior: Names goods sold by the yard.

Primary Activity	Elementary-Middle	Secondary Activity
Have children bring in sample of things bought by the yard. Make charts or bulletin board.	Go to a fabric shop in town. Name all the things bought by the yard, such as thread, ribbon, elastic, and cloth. Go outside and run the 10 yard or 50 yard dash. Lay out a kickball field in yards or measure yard markings on a football field.	Same as Middle activity.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 14

Behavior: Uses whole numbers and half numbers of yards ($2\frac{1}{2}$).

Primary Activity	Elementary-Middle	Secondary Activity
Let the children measure different objects in the room and let them figure out or see the length.	Bring pattern of simple apron and let them figure how much material they will need. Provide the material and let them cut the appropriate length.	Plan a trip to a department store or cloth shop and buy material to make different items.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 15/#16

Behavior: Uses concept that yard goods have a price per yard.

Primary Activity	Elementary-Middle	Secondary Activity
	Bring in several bolts of material or use butcher paper to simulate material and price them differently by the yard (Example: 99¢ yd.). Ask the children if they know how material is sold and if they have ever bought any in units other than yards. Name or list other things bought by the yard (ribbon).	Plan a trip to a cloth shop; price materials. Have class make simple things such as napkins, table cloths and apron.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 17

Behavior: Uses concept of area as product of length and width.

Primary Activity	Elementary-Middle	Secondary Activity
	After telling students concept that area = l.xw. (or w.xl.) and having students repeat the rule together and individually. Ask them questions such as "How would I find the area of the chalkboard?" To this the child might tell you to multiply the one length and one width or something similar. Give written problems (not requiring a number for answer) giving how long and wide something is. Just ask for how they would find the answer. Ask to give rule only not to figure it out.	Ask students how to figure large areas in real estate give the l and w. Require the "rule" be given but not actually working out a number (such as: Question: how find area of a city block 50 ft. by 100 ft. Ans-multiply 50 times 100). Ask students to teach or explain concept of A = l x w to a lower level child (or classmate or teacher).

(cont'd)

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 17 (cont'd)

Behavior: Uses concept of area as product of length and width.

Primary Activity	Elementary-Middle	Secondary Activity
	Fill in the blanks done by students if given the rule with parts left out (such as: ___ = l x w, ____ = w x l, A = ___ x l, A = w x _____).	

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 18

Behavior: Figures area of rectangle or square (A = l x w).

Primary Activity	Elementary-Middle	Secondary Activity
	Use several large rectangle and squares in which smaller squares fit such as 3 sq. by 5 sq. and multiply l x w and w x l (3x5, 5x3) to find how many fit in the larger rectangle or box for area of it. Have students lay out a length of string in different rectangles and squares shapes then measure sides and find area for them using l x w = A. (cont'd)	Have students use l x w =A to compare the sizes of many rectangles and squares to find which has largest area. Have students make boxes (cut and tape using pattern) and by measuring and using l x w find area of each side of the box (sample pattern with dotted fold lines. (cont'd)

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 18 (cont'd)

Behavior: Figures area of rectangle or square (A = l x w).

Primary Activity	Elementary-Middle	Secondary Activity
	Have students measure the classroom areas (floor, wall chalkboard, etc.) using l x w = A. Students allowed to use different shapes, sizes, and colors of rectangle and squares to make collage with but allowed to take the chosen rectangles only after they have found each area by l x w = A.	Have students figure how much carpet would need to cover a floor (and actually carpeting the area if possible) by using l x w = A. Use real floor and/or doll house floors. Include measuring and cutting carpet and see if it fits.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 19

Behavior: Uses concept that in measuring area, length or width can be stated as first multiplier.

Primary Activity	Elementary-Middle	Secondary Activity
	Give 10 problems and direct students to do any 5 using l x w = A and the other 5 using w x l = A. Divide students into 2 groups and give each group identical rectangular shapes. Direct one group to measure the length of first and then multiply that times the width. Direct the 2nd group to measure the width first and then multiply it times the length. Have both groups compare area answers. This can be done several times with several sets of identical rectangles. Give students several pro-	Give students a rectangle to measure and then tell to find area using their measurements and allow to choose l x w or w x l then compare answers gotten both ways. (A) Divide students into teams and give each team the same or a different total area such as 24 sq. ft. Let them see how many lxw they can think of that will give them that total area such as 2'x12', 12'x2'; 6'x4', 4'x6'; 3'x8', 8'x3'; 1'x24', 24'x1'. Using a time limit see which team can find the most. Discuss

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 19 (cont'd)

Behavior: Uses concept that in measuring area, length or width can be stated as first multiplier.

Primary Activity	Elementary-Middle	Secondary Activity
	with reversed l x w as multipliers and have them find out which boxes have the larger area, such as rectangle 5"x2" and rectangle 2"x5". Then discuss that they are the same. Give them more problems and tell them to choose for themselves either l x w or w x l to find areas. Designate one side of rectangle as length and the other as width and use l x w to get area. Then switch the designated sides and use l x w to get area. (cont'd)	give the same answer such as 2'x12' and 12'x2'. (B) Give them the same area they had before and let them see how many w x l they can think of to give that area. Compare answers for (A) and (B). Give students problems of finding areas and direct them to use l x w for finding the first, w x l for the second, then alternate. Divide into 2 teams and compete at finding areas first. One team using (cont'd)

Skill Category: Length/Area **Flow Chart Code:** Middle I-I # 19 (cont'd)

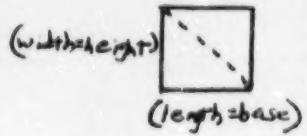
Behavior: Uses concept that in measuring area, length or width can be stated as first multiplier.

Primary Activity	Elementary-Middle	Secondary Activity
	Discuss same answer and does not matter which sides you call l and w or which order "x" by.	l x w and the other w x l. After a while, switch what teams used.

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 20

Behavior: Figures area of triangle.

Primary Activity	Elementary-Middle	Secondary Activity
	1.(a) Students divide rectangle and square into 2 triangles to see that the triangles have $\frac{1}{2}$ area of the square or rectangle so if square A = l x w then triangle A = $\frac{1}{2}$ l x w. (b) Discuss that sides of a triangle have different names corresponding to the length and width (l = base) (w = height) (base = bottom line) (height = side) so triangle Area = $\frac{1}{2}$ l x w is written as $\triangle A = \frac{1}{2}(bxh)$. (c) Show triangles alone (not inside rectangle or square) and have student find areas using A = $\frac{1}{2}$ base times height. (cont'd)	1.Students make a quilt or baby quilt using different shapes and size of cloth triangles and figure areas of the triangles. Math total triangle area to total quilt area. 2. Students cut and sand wood into children's building blocks as gifts or to sell, using many sizes and shapes including triangles. Then figure areas of blocks they made or figure areas of shapes drawn on wood before cutting them out, perhaps comparing them to total area. (cont'd)

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 20 (cont'd)

Behavior: Figures area of triangle.

Primary Activity	Elementary-Middle	Secondary Activity
	(d) Show how to find height in Scalene triangle. 2. Given many different sizes, shapes and colors of construction paper triangles, students find their areas. 3. Students cut a picture into triangles to make a jigsaw puzzle and figure the triangle areas of the triangle they made.	3. Students use wooden shapes including triangle to build things such as checkerboard, book shelves, bird houses doll house, etc. and find areas as they are being made. 4. Students cut out and measure triangle found in magazine advertisements and pictures and use them for collages.

Skill Category: Length/Area **Flow Chart Code:** Middle I-I # 21

Behavior: Names some specific units of measuring length in metric system.

Primary Activity	Elementary-Middle	Secondary Activity
	1. Make up a story about someone from our world visiting "metricland" or some country where the metric system is used. Tell it to the children letting them fill in the names of distances or explanations in metric terms. 2. Build a paper chain with each paper link for learning one term in metric unit length measurements. 3. Make a map of "Metric City" and let children name the roads and places on it using metric terms like "Millimeter Dr." (this may go along with # 1 above).	1. Make up rhymes, riddles, tongue twisters, etc. using metric terms and let kids make up their own until the terms are all known by them. Examples: (a) Many mad monsters made much money marking off muddy meters. (try to say 3 times fast). (b) "Slow Sally Keeter had a hen but couldn't eat her. On a chase the hen would lead her, cause it ran a faster meter, and in every race would beat her, cause it didn't want to feed her." —by Collier

(cont'd)

Skill Category: Length/Area

Flow Chart Code: Middle I-I # 21 (cont'd)

Behavior: Names some specific units of measuring length in metric system.

Primary Activity	Elementary-Middle	Secondary Activity
		(c) What metric term will finish this sentence? If a boy is told to go somewhere to be introduced to a girl he is _____. (centimeter--sent to meet her)

Skill Category: Length/Area **Flow Chart Code:** Secondary I-I # 1

Behavior: Converts a number of units to the parallel unit plus remainder. (How many yd. is 37 ft.? 12 yd. and 1 ft.)

Primary Activity	Elementary-Middle	Secondary Activity
	1. Give students measuring sticks (such as an inch stick, a yd. stick, a ft. ruler) and let them work out equivalents by concrete comparisons. 2. Using string allow students to cut different lengths of string to specific measurements. Use them to figure out equivalent measures by cutting larger units into smaller and connecting smaller units together into larger ones. 3. Given a number of units students pick correct equivalent from multiple choice: 103 13 in.= (a) 1 ft.3in. (b) 1 ft.1in. (c) 2 ft.	1. Have students make their own measuring sticks and use them to make concrete comparisons between inch, ft., yd., and figure out equivalents. 2. Make up practical word problems of possible everyday situations in which students must convert a measurement to an equivalent one. 3. Given problem equivalents in which the wrong answer is given have students correct them.

Skill Category: Length/Area **Flow Chart Code:** Secondary I-I # 2

Behavior: Recognizes 1/8 as one-eighth.

Primary Activity	Elementary-Middle	Secondary Activity
	1. Cuts real objects and foods and/or pictures of them into eights and then labels pieces with "1/8" symbol when orally directed. 2. Given a choice of pictures or objects representing different fractions student picks our one with divisions of one-eighth from others such as 1/6, 1/2, etc. then labels the correct ones with "1/8" symbol when orally directed. 3. Student correctly picks out symbol of "1/8" from other fractions and symbols.	1. (To be sure student recognizes 1/8 as one eighth and not just one of 8 unequal divisions:) show student several objects or pictures of objects with each cut into 8 pieces, some into equal parts and some into unequal parts. Have student label divisions with symbol when orally directed. 2. Students make game using pictures of objects cut into various fractions (including one eighth) on cards. Put in some useless pictures with uneven divisions, not fractions. Have cards with symbols of fractions on them also. Student

Skill Category: Length/Area

Flow Chart Code: Secondary I-I # 2 (cont'd)

Behavior: Recognizes 1/8 as one-eighth.

Primary Activity	Elementary-Middle	Secondary Activity
		draws cards and attempts to match fraction card to picture card of that fraction. One with most pairs when cards are all drawn wins.

Skill Category: Length/Area

Flow Chart Code: Secondary I-I # 3

Behavior: Uses concept of 1/8 inch.

Primary Activity	Elementary-Middle	Secondary Activity
		1. Have student explain how an inch can be divided into parts and tell you what each part is called when you di divide an inch into 8 equal pieces (other divisions can be used for further fractions such as 1/2, 1/4, 1/16 of an inch). 2. Give student a piece of string one inch long and direct him to use his pencil to divide it into eights of an inch. 3. Have students pick which line of several is 1/8 in. long (also can pick out ½", 1/16", 1/4" etc. if wish to continue.

Skill Category: Length/Area **Flow Chart Code:** Secondary I-I 4

Behavior: Points out 1/8 inch on a yardstick or a twelve inch ruler.

Primary Activity	Elementary-Middle	Secondary Activity
	1. Have students measure things which can be measured in eighths of an inch (such as small lines on a ditto sheet) and things which can be measured in inches plus 1/8" or more in length. 2. Have student mark off 1/8's of inches along his notebook paper edge or on his own paper ruler using a regular ruler. 3. Have students use individual rulers to show you the 1/8" divisions as you go around the room, asking them to show you 1-2/8" or 5/8" or so on.	1. Have student mark off 1/8's of inches on measuring stick he has made using a ruler. 2. Give students a sheet with 5-6 different lengths of lines on it and a list of 7-8 measurements to pick out/guess the correct length Student may then measure to see if he is correct. Remember to include lines and measures that have eighths of an inch. 3. Direct students to draw a square using 3/8" for each side. 5/8" and so on.

Skill Category: Length/Area Flow Chart Code: Secondary I-I # 5

Behavior: Points out 1/16 inch on a yardstick or twelve inch ruler.

Primary Activity	Elementary-Middle	Secondary Activity
	Replace 1/16 inch in any of the suggestions made for 1/8 inch (Secondary # 4).	

Skill Category: Length/Area

Flow Chart Code: Secondary I-I # 6

Behavior: Uses concept of miles per hour (length per time).

Primary Activity	Secondary Activity
	1. After discussing <u>what</u> <u>m.p.h.</u> <u>means</u> give problems in everyday driving situations. (a) Given mph and distance to be traveled figure how long it will take to get there. (b) Figure mph when given time for a trip and distance traveled. Have student give answers in mph. (c) Given mph traveling speed and distance traveled have student figure time it would take. 2. Have student explain to you what a speedometer is for and what it means. 3. Question student about stop and go and fast and slow driving and how that affects mph and time it takes for a trip. 4. Direct discussion of speed limits; safety concern with mph, gasoline concern with mph and speed limit of 55 mph; why different speed limits, who sets them, examples of them and what they mean.

Skill Category: Length/Area **Flow Chart Code:** Secondary I-I # 7

Behavior: Figures prices of items bought by the foot (price per unit) (rope, cord, electric wire).

Primary Activity	Secondary Activity
	1. Have students make or buy something they can <u>sell</u> or <u>resell</u> by the foot (such as taking plain ribbon and decorating it for resell). Find the total cost of ribbon by multiplying the price per ft., then take the total price they want to get for the finished decorated ribbon, divide to find price per ft. to sell it for (or vice versa). 2. Have student go to the hardware store and record prices per ft. for various items such as lengths of chain, rope, cord and electric wire then decide on lengths to figure price of total. 3. Bring several spools of thread and cord of different lengths with different total prices and figure which is cheaper in price per ft. by dividing.

Skill Category: Length/Area

Flow Chart Code: Secondary I-I # 8

Behavior: Figures out word problems involving prices per yard (carpet, cloth).

Primary Activity	Secondary Activity
	1. Plan and carry out a project using cloth (such as sewing, tie-dying, etc.). Have student figure how many yards they need and <u>total cost</u> by price per yd. Even boys can do this if the project is appealing to them or to be a gift. 2. Taking floor area and price of carpet student figures cost of carpeting the floor. 3. Using ads for linoleum tile or area rugs with total price for total sq. ft. figure price per sq. ft. and compare prices of various rugs, etc. 4. With size and cost of tablecloth and curtains figure price per sq. ft. for them.

Skill Category: Length/Area **Flow Chart Code:** Secondary I-I # 9

Behavior: Uses application of Area such as: a) size of rug or linoleum, b) size of tablecloth, c) yards of cloth for curtains, d) how much furniture will fit along a certain wall, e) wallpaper to cover a wall.

Primary Activity	Secondary Activity
	1. Take students to store and get information on prices, sizes, etc. Have them find areas of their choice (or of the schoolroom rug or linoleum). 2. Have students make their own tablecloths and/or bring them from home and figure their areas. 3. Have students measure their curtains at home and/or make their own and measure them, then figure how many yards of cloth they are. 4. Have student pick out or make a house plan and pick out furniture then measure all to see if furniture will fit. Also can take part of classroom. Figure area and see what furniture will fit in it. 5. Measure classroom wall, bathroom wall, etc. and figure area for wallpaper then maybe actually cover the wall.

Skill Category: Length/Area

Flow Chart Code: Secondary I-I # 10

Behavior: Figures area of circle. Figures diameter of circle.

Primary Activity	Secondary Activity
	1. Have student make his own circle to find areas and diameter by drawing around lids, glasses, bowls, plates, etc. 2. Have student figure area of round table tops (and tablecloths to see if it will fit) and also diameter. 3. Show student protractors and compasses and have them to make circles with them, then figure areas and diameter.

Skill Category: Length/Area **Flow Chart Code:** Secondary I-I # 11

Behavior: Compares systems of length measurement (English and metric).

Primary Activity

Secondary Activity

1. Make two measuring wheels, one of English and one metric measure, so that when it rolls it measures distance then compare metric distance with English
2. Compare metric rulers and measuring sticks to English ones to see length differences and unit differences in size.
3. Mark off two hopscotch boards for younger children. One using metric and one using English, and compare them.
4. Make projects using metric measures such as checkerboard, sewing, etc. by using approximate or equivalent measures to English.
5. Measure common objects in room with both English and metric and compare (wall, book, door, etc.)

Skill Category: Length/Area

Flow Chart Code: Secondary I-I # 12

Behavior: Uses concept of acre.

Primary Activity	Secondary Activity
	1. Take class on an outing and have students point out some land parcels of about an acre. 2. Have students estimate how many acres in a given land parcel. 3. Discuss the equivalent square area of an acre. 4. Have students tell you about farms, parks, etc. with acreage they have known and are familiar with.

Skill Category: Length/Area

Flow Chart Code: Secondary I-I # 13

Behavior: Uses 1 mile as 1760 yards.

Primary Activity	Elementary-Middle	Secondary Activity
		1. Have student change number of yards to miles and vice versa, given problems. 2. Using 1/16 inch as a yard, have students draw a large map of a simple section of road (such as school).

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